

MR2349-730
Appl. No. 09/988,426
Amendment dated 24 November 2003
Responsive to Official Action dated 12 August 2003

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions, and listing of claims in the application:

LISTING OF CLAIMS:

Claim 1 (Currently amended): A stator structure with composite stator windings for high current conditions, comprising:

a stator ring formed by a plurality of units with equal size and made of a rigid material with a property of not being easily bendable, each unit having a concave end on one end thereof and a convex end on another end thereof, the concave end having a shape complementary to that of the convex end for engaging with the convex end to limit the concave end to separate from the convex end ~~separated~~ in a lateral direction, each unit of the stator ring having a plurality of embedding grooves spaced to each other with same distance and formed in a side thereof, and each of the embedding grooves having an equal pitch;

a plurality of stator teeth respectively engaged with the stator ring, each of the stator teeth formed with an arc-shaped tooth surface and having a tooth flank backwardly extended ~~extend~~ from a central portion of the tooth surface and a tooth tail outwardly extended from an end of the tooth flank, the tooth tail having a

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complementary contour mating to that of the embedding groove, wherein the tooth tail is firmly embedded ~~into~~ in the embedding groove, the tooth flank having a thickness thicker than that of the tooth tail for the stator teeth respectively engaged with the embedding grooves of the stator ring easily, and each of the stator teeth having a pair of closing rings respectively disposed on a top side and bottom side thereof; and,

a plurality of insulating stages mounted on the stator teeth, each insulating stage having a hollow post through which a respective tooth flank of a corresponding tooth is disposed, a winding having a predetermined wound shape with a closed contour and open ends formed by a long winding with a large coil radius to be penetrated by the post and having a central axis direction parallel to a plane of the closing ring ;

a plurality of insulating plates coupled to proximal ends of respective posts of the insulating stages and each having a hollow center for the respective post to be embedded into the hollow center;

whereby the design of the thickness of the tooth flank is thicker than the thickness of the tooth tail, the winding pre-wound prior to assembly with the tooth flank;

whereby the engaging method of the stator ring and the embedding method by complementary contour for the tooth tail of stator teeth to cooperate with the rigid material, the easy-assembly and easy alignment property of stator teeth and the pre-winding of copper wire is thereby attained.

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Claim 2 - 6 (Cancelled).

Claim 7. (Currently amended): The stator structure as in claim 1, wherein further comprising a pair of closing rings respectively disposed on opposing ends of the stator ring, each said closing ring being formed by a plurality of closing ring portions joined together, each of the stator teeth have having a pair of said closing rings ring portions respectively disposed on a topside and bottom side thereof, each of said closing ring portions and having connecting ends for coupling to adjacent closing rings ring portions, ; the closing rings being integrally connected by respective connecting ends, whereby said plurality of stator teeth are secured together in a closed contour for respectively receiving said plurality of insulating stages on said stator teeth combined with said closing rings and then receiving said windings on said insulating stages as a subassembly, said subassembly being subsequently joined to said stator ring by respective coupling of said tooth tails with said embedding grooves.

Claims 8 - 9 (Cancelled).